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Charting current evidence on the health and non-health benefits and equity impacts of pandemic/epidemic individual-level economic relief programmes: a scoping review protocol

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ABSTRACT

Introduction The emergence of a regional or global scale infectious disease outbreak often requires the implementation of economic relief programmes in affected jurisdictions to sustain societal welfare and, presumably, population health. While economic relief programmes are considered essential during a regional or global health crisis, there is no clear consensus in the literature about their health and non-health benefits and their impact on promoting equity. Thus, our objective is to map the current state of the literature with respect to the types of individual-level economic relief programmes implemented during infectious disease outbreaks and the impact of these programmes on the effectiveness of public health measures, individual and population health, non-health benefits and equity.

Methods and analysis Our scoping review is guided by the updated Arksey and O'Malley scoping review framework. Eligible studies will be identified in eight electronic databases and grey literature using text words and subject headings of the different pandemic and epidemic infectious diseases that have occurred, and economic relief programmes. Title and abstract screening and full-text screening will be conducted independently by two trained study reviewers. Data will be extracted using a pretested data extraction form. The charting of the key findings will follow a thematic narrative approach. Our review findings will provide in-depth knowledge on whether and how benefits associated with pandemic/epidemic individual-level economic relief programmes differ across social determinants of health factors.

This information is critical for decision-makers as they seek to understand the role of pandemic/epidemic economic mitigation strategies to mitigate the health impact and reduce inequity gap.

Ethics and dissemination Since the scoping review methodology aims to synthesise evidence from literature, this review does not require ethical approval. Findings of our review will be disseminated to health stakeholders at policy meetings and conferences; published in a peer-review scientific journal; and disseminated on various social media platforms.

Strengths and limitations of this study

- ⇒ With the use of a scoping review study design, we will be to identify gaps in the current literature associated with health and non-health effect of individual-level economic relief programmes.
- ⇒ Our review eligibility criteria have no restriction on country type, language and study design.
- ⇒ Our screening and data extraction forms were pretested by all reviewers and revised as needed to ensure they are adequately sensitive to capture interest outcomes in eligible studies.
- ⇒ Multiple databases will be searched to ensure our findings are comprehensive and accurate.
- ⇒ Because this is a scoping review, we will not assess risk of bias in eligible studies.

INTRODUCTION

Infectious disease outbreaks are unpredictable but recurring events that have severe consequences on societies when they occur.[1] The spread of a disease outbreak may be within a geographical region or continent, known as an epidemic.[2] An example is the 2014–2016-Ebola outbreak in West Africa, which was widespread in three African countries: Guinea, Sierra Leone and Liberia.[3] An epidemic can also spread over several countries or continents, usually affecting a large number of people, called a pandemic.[4] For example, the 2019 Coronavirus outbreak was declared a pandemic when the disease had spread to 114 countries and more than 118 000 cases were reported.[5]

The occurrence of either an epidemic or a pandemic often results in catastrophic economic collapse and dire human, social, and health consequences.[2] The consequences of infectious disease outbreaks are usually disproportionately distributed among social

groups due to pre-existing inequities in social determinants of health.[6] For example, in a study aimed to assess the burden of the H1N1 pandemic in North America, ethnic minorities were reported to be more than two times at risk of being hospitalised for H1N1 disease compared with nonethnic minorities.[7] In another study, the multiple impacts of the Ebola epidemic outbreak in three low-resource countries—Sierra Leone, Liberia and Guinea—included an 80% decrease in maternal delivery care, education loss and reduced child protection, widespread job losses and food insecurity.[8] In a report released by Statistics Canada in 2021, the COVID-19 mortality rate was found to be almost twice as high for those living in regions with high household density compared with regions with low household density (16 per 100 000 vs 9 per 100 000).[9]

Published evidence show that pandemic-informed economic relief policies could encourage changes in human behaviour and motivate individuals to make healthy choices that impacts on health and overall well-being.[10] Previous studies have also shown that access to paid sick leave during an infectious disease outbreak promoted adherence to physical distancing among recipients and in turn led to the reduction in the spread of the disease.[11 12] Economic relief policies could also provide economic benefits which may have an indirect impact on health. For example, in a USA study, the implementation of state unemployment insurance (UI) benefits and the Coronavirus Aid, Relief, and Economic Security (CARES) Act during the COVID-19 pandemic was associated with household consumption, family residual savings and poverty rate[13 14]—which are determinants of health.

Individual targeted economic relief programmes can be described as economic interventions implemented by governments, institutions or private sources during an epidemic or a pandemic to limit the disproportional health and economic consequences often experienced by populations vulnerable to the disease (eg, low-income individuals and households, individuals with comorbid conditions, seniors), to support public measures and presumably to improve population health.[2 15] Some of the programmes implemented during the COVID-19 pandemic included paid sick leave, caregiver and child-care benefits, and unemployment compensations for furloughed workers, food supply, direct cash payments to low-income earners.[15–17] In a US study conducted during the COVID-19 pandemic, recipients of the federal paid sick leave were reported to have spent more time at home (4.2% increase) and decreased their mobility by 6.1%, which in turn promoted social and physical distancing.[17] However, in other countries, such as UK and Canada, where similar programmes were implemented, information on the potential public health benefit of the programmes is not yet known.[16]

In our exploratory review conducted in few electronic databases in September 2020 to assess the feasibility of a broader review research, we found very limited evidence on the health-related benefits of economic relief programmes. In one of the eligible studies, the health benefit of providing health insurance coverage to underinsured and non-insured HIV-infected patients during HIV epidemic was reported to decrease the number of hospital admission by 50% and decrease medical expenditure incurred by patients by 25%.[18 19]

Because the implementation economic relief programmes are often costly[15] but also often regarded as an essential intervention during infectious disease outbreaks,[2] there is a need to systematically chart their health benefits (relating to population health and public health measures) and their equity impact to inform pandemic preparedness planning.

Our objective is to map the current state of literature on the types of individual targeted economic relief programmes during infectious diseases outbreaks, and to highlight how these programmes impact on the effectiveness of public health measures, individual and population health, health equity, non-health outcomes (including economic) during a global health crisis. While we are more focused on the health outcomes, all outcomes assessed to determine the success of an eligible programme based on the aim of the programme will be captured.

METHOD AND ANALYSIS

Study design

This is a scoping review.

Our review is guided by the scoping review framework proposed by Arksey and O'Malley updated by *Levac et al* and Joanna Briggs Institute.[20–22] The updated version of Arksey and O'Malley framework comprises six stages, including identifying research questions and relevant studies, data charting and an optional consultation with key stakeholders to identify additional references and gather feedback on the findings of the scoping review. The Arksey and O'Malley framework is presented in table 1. Our protocol included information on the 27 items in the Preferred Reporting Items in Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guideline.[18] The main review reporting will also follow the PRISMA-ScR guideline.[23]

Stage 1: identifying the research questions

To help identify our research questions and refine the scope of this protocol, we conducted first an exploratory review of the literature on the benefits associated with pandemic/epidemic economic relief programmes and on how these benefits differ across key equity factors. Based on our findings, we decided to restrict the review to economic relief programmes provided to individuals as it became clear that the benefits of individual-level programmes were more likely to be evaluated than the business-level programmes. Our overarching review questions are 'What is known in the literature about the health and non-health benefits of individua-level economic relief programmes that are implemented

Table 1 The updated Arksey and O'Malley scoping review framework stages adopted from Besar Sa'aid *et al*[28] with authors permission

Stage	Description
Identifying the research question	1. As a guide to build a research strategy. 2. Should be wide enough to generate a breadth of coverage.
Identifying relevant studies	1. Via diverse sources: electronic databases, reference lists, hand-searching of key journals, existing networks, relevant organisations and conferences. 2. Make decision about the coverage of the review in terms of time span and language (consider time and budget constraints).
Study selection	1. The criteria for the inclusion/exclusion criteria are device post hoc based on increasing familiarity with the subject matter through reading the studies. 2. Use an iterative team approach to select the studies and extract the data.
Charting the data	1. The work involves 'charting' key items of the information obtained from the primary research reports being reviewed 2. A data-charting form is developed and used to extract data from each study.
Collating, summarising and reporting the results	1. An analytical framework or thematic construction is used to provide an overview of the breadth of the literature but not a synthesis 2. A numerical analysis of the extent and nature of the studies using tables and charts is presented. A thematic analysis is then presented 3. Clarity and consistency are required when reporting results.
Consultation exercise (optional)	i. Provides opportunities for consumer and stakeholder involvement to suggest additional references and provide insights beyond those in the literature.

during infectious disease outbreaks and how do these benefits associated with these programmes differ across equity factors?'

Our specific research questions include:

What are the types of individual-level economic relief programmes implemented during an infectious disease outbreak?

How and to what extent do pandemic/epidemic individual-level economic relief programmes impact the effectiveness of public health measures during epidemics?

How and to what extent do changes in public health measures associated with pandemic/epidemic individual-level economic relief programmes impact health outcomes?

Do health benefits associated with pandemic/epidemic individual-level economic relief programmes differ across demographic groups (eg, age, gender, race,/ethnicity/culture/language and occupation)? If so, how?

Do health benefits associated with pandemic/epidemic individual-level economic relief programmes differ across social groups (eg, socioeconomic status and level of education)? If so, how?

Do health benefits associated pandemic/epidemic individual-level economic relief programmes differ across jurisdictions (eg, high income countries, low-income and middle-income countries)? If so, how?

What are the non-health or economic outcomes assessed in eligible studies identified?

What are the limitations associated with pandemic/epidemic individual-level economic relief programmes?

What are the knowledge gaps in the literature in relation to the questions above?

Stage 2: identifying relevant studies

Following the updated Arksey and O'Malley framework,[20 21] the aim of the second stage of the scoping review process is to identify relevant studies from diverse sources (see table 1). To do this, a comprehensive search strategy was developed by an information specialist in the Ovid Medline database using text words and Medical Subject Headings (MeSH) terms. The MEDLINE search terms were tested to improve specificity and then translated to other databases. The MEDLINE search strategy is presented as online supplemental file.

Our choice of databases for this comprehensive review is based on our findings from the exploratory review. Eligible studies found in our preliminary review were indexed in cross-continental electronic databases (eg, Ovid Medline) and in databases that are commonly indexing articles from low-income and middle-income countries (eg, Global Index Medicus). An appreciable number of articles were also found in the grey literature. Thus, for the main review, we will search the following eight electronic databases for relevant articles: Ovid MEDLINE, OVID E-pub Ahead of Print In-Process & Other Non-Indexed Citations, Ovid EMBASE, EconLit, CINAHL, ISI Web of Science, Global Index Medicus, Cochrane CENTRAL. Reference lists of eligible studies will also be manually searched to ensure that all relevant articles are included. The grey literature search will be conducted in Open Grey and selected economic websites, including Organisation for Economic Co-operation and Development International website, International Monetary Fund, WHO and World Bank.

As suggested by Levac *et al*,[21] an iterative process was used to identify the appropriate text words and MeSH terms for the search strategy. Concepts relating to pandemic/epidemic infectious diseases specifically, coronaviruses, influenza A, SARS, MERS, HIV/AIDS, Zika, Ebola and West Nile, were included in the initial comprehensive Medline search strategy (see online supplemental file 1). The MeSH terms and text words used for economic relief programmes included government financing, public assistance, food assistance, medical assistance, workers compensation, social welfare, charities and childcare.

We agreed on the following eligibility criteria based on our exploratory review findings:

- Target population: individuals of all ages eligible for and received any form of pandemic/epidemic individual-level economic relief programme.
- Pandemics/Epidemic diseases: Outbreaks that occurred in the 21st century. The pandemics/epidemic outbreaks were restricted to the latest century because of the differences in living standard, public health systems that have occurred in countries pre-21st century. Specifically, we focus on COVID-19, HIV, Zika, Ebola, West Nile, MERS, SARS and influenza A.
- Intervention type: Eligible programmes are individual-level economic relief programmes distributed to individuals during an epidemic or a pandemic to limit the disproportional health and economic consequences experienced by populations vulnerable to the disease, to support public measures, and presumably to improve population health. Examples of these programmes include cash assistance, paid sick leave financial incentives for vaccine uptake, food supply, unemployment benefits and other economic relief packages to individuals.
- Publication time frame: restricted to articles published in the 21st century (ie, from 1 January 2001 to present).
- Study design: no restriction.
- Country/region: no restriction.
- Language: no restriction.
- Time horizon to assess outcome: We do not specify a time horizon for assessing health effects of economic policies. Thus, study eligibility is not affected by time horizon used to assess health effects of economic policies.

We will exclude commentaries, editorials, book chapters, conference abstracts, letters, studies focused on business-tailored economic relief programmes, school closure polices rather than individual-level programmes and animal studies.

Stage 3: study selection and screening

Retrieved studies from the different databases will be imported into DistillerSR,[24] a reference manager software, for deduplication and screening.

An inter-reliability training was conducted for the study reviewers. For the inter-reliability training process, two reviewers were invited, and the scoping review objectives and study eligibility criteria were explained in detail. After the discussion, 100 articles were selected randomly from the initial comprehensive MEDLINE search and distributed to the 2 reviewers who will oversee the screenings and data charting processes. Each reviewer screened the title and abstract of the training set (ie, the 100 articles) independently against the review's eligibility criteria. The agreement level between the two reviewers was assessed. The agreement level score, that is, the percentage of the total number of eligible studies identified in training set by each reviewer after independent screening, was 100%, suggesting that the trained reviewers agree on how to identify eligible studies.

The trained reviewers will perform title and abstract screening as well as the full-text screening process independently, and the rationale for exclusion of articles at full-text screening stage will be documented. In the event of a conflict on study eligibility, discrepancies will be discussed until consensus is reached. If consensus cannot be reached after discussion, a senior member of the team will be invited to resolve the conflict.

Stage 4: data charting

The development of the data charting template was guided by the PROGRESS-Plus framework and by the findings of our exploratory review. The PROGRESS-Plus framework is a health equity-informed framework that considers the impact of social determinants of health factors on health equity under the following dimensions: the place of residence, race/ethnicity/culture/language, occupation, gender, education, socioeconomic status, social capital, age, disability and sexual orientation.[25 26]

To determine the accuracy of the variables in the data charting form to correctly capture our data of interest, we pretested the data charting form using eligible studies identified in the training set. The trained reviewers extracted data from two eligible studies into the developed data charting template. The sensitivity and specificity of the variables in the template were assessed qualitatively by the trained reviewers and were deemed satisfactory. Because this is a scoping review and the data charting process follows an iterative approach,[20–22] the data charting form will be modified to include more variables during the main review if necessary.

Variables in the charting form include bibliographical data (such as authors, title, journal and year of publication, country of study), study and relief programme data (such as study designs, data type, settings, description of relief programme, the timing of programme implementation), and data on the impact of the economic relief programme on heath and equity dimensions. In the main review, the data charting process will be performed independently by the trained reviewers. The data extraction template is presented in table 2.

Table 2 Key variables in data extraction template

Main category/subcategories	Description
Study and population characteristics	
Author(s)	► Who is the author(s)?
Year of publication	► What year was the study published?
Publication title	► What is the publication title?
Study objective(s)	► What is the primary objective of the study?
Funding source (s)	► Who is/are the study funding source(s)?
Study country	► In which country was the study conducted?
Study target population	► Who is the target population?
Study design	► What is the study design?
Infectious disease outbreak description	
Name of disease	► What is the name of the disease of concern?
Time period of disease outbreak	► What year did the outbreak occur?
Economic relief programme(s) characteristics	
Programme description	► What type of economic relief programme(s) is/are implemented? ► What was the programme implemented and for how long? ► What equity factor(s) is/are considered when assigning eligibility? ► What other inclusion or exclusion criteria were considered when assigning eligibility?
Impact of the programme on health and publichealth measure	
	► What is/are the impact(s) of the programme(s) on public health measure? ► What is/are the impact(s) of the programme(s) on individual and population health? ► What is/are the knowledge gap(s) related to the health effect of the programme?
Impact of the programme on equity	
Population demographics	► How does the health effect of relief programme(s) differ across populations of different age, gender, race/ethnicity/culture/language and occupation? ► What is/are the knowledge gap(s) related to the health effect of the relief programme(s) on population demographic?
Social factors	► How does the health effect of relief programme(s) differ across populations of different socioeconomic status, social capital and education? ► What is/are the knowledge gap(s) related to the health effect of the relief programme(s) on social factors?
Jurisdiction	► How does health effect of the relief programmes differ across populations of different countries and place of residence? ► What is/are the knowledge gap(s) related to the health effect of the relief programme(s) on jurisdiction type?
Impact of programme on non-health/ economic measures	► What is the impact of the programme on non-health or economic measures

Stage 5: collating, summarising and reporting results

The data analysis will provide an overview of the current evidence on the health and non-health gains of pandemic/epidemic individual-level economic relief programmes, how health and non-health gains associated with the identified programmes differ across population groups and the impact on equity. The evidence generated will inform future pandemic/epidemic mitigation strategies.

In our results, we will summarise the public health measures, health, non-health measures (including economic measures) and equity-impact associated with individual-level economic policies and the magnitude of the impacts of these programmes on these outcomes. We will chart the evidence for each research question using thematic analysis approach.

In the equity-impact result section, we will provide extensive details on the major differences in the manner of these economic policies were targeted in relation to the equity variables that were prioritised for the programme and the impact of the policies on study outcomes by equity factor. If possible, we will also provide a descriptive analysis of the major equity variables prioritised in the different policy programmes across studies. We will only compare outcomes of similar economic policy types

across studies if the population characteristics and environmental settings across the studies are comparable. We will use advanced visualisation techniques to summarise our findings.

We will follow the PRISMA-ScR checklist[23] and the updated Arksey and O'Malley's reporting methods[20–22] to provide a descriptive numerical analysis of the topic, including the extent, characteristics and distribution of the included studies. The study selection processes will be presented as a flow chart using the 2020 updated PRISMA flow chart.[27] Thematic summary of the data charted will be tabulated. The discussion and interpretation will be based on the research questions and purpose of this scoping review. We will also highlight areas where knowledge gaps exist, and which may need further investigation. We will present the results in aggregate and visual forms (eg, tables, charts, evidence and concept maps, and bubble plots) as appropriate. Data charting will be conducted in Microsoft Excel. Risk of Bias assessment will not be conducted because this is a scoping review.[23]

Stage 6: consultation

The Arksey and O'Malley framework[20] suggests that consultation with stakeholders is an optional stage in conducting a scoping study, but we will be incorporating this stage in our review because our findings could help inform pandemic preparedness policies. The consultation stage also adds to methodological rigour.[21]

We will be inviting key Ontario health experts to offer additional perspectives and meaning to our interpretation of key findings during the data charting process and/or during the result compilation stage. The validity of our review's key findings will be judged by the senior authors in our team who are evidence synthesis experts. Our findings will also be disseminated to other national and international health stakeholders at policy meetings and public health conferences.

Patient and public involvement statement

There will be no involvement from patients or members of the public in the design, or conduct, or reporting, or dissemination plans of this study.

This protocol reports the systematic and transparent methodology that will be employed to map the health, non-health and equity impact of pandemic/epidemic individual-level economic relief programmes. Our scoping review will be the first study to comprehensively chart the impact of pandemic/epidemic-related economic relief programmes on public health measures, population health and economic measures. This review will also provide an in-depth knowledge of how the health-related effect of these programmes differs across key equity considerations, which is essential information for decision-makers as they seek to understand the role of economic mitigation strategies during pandemics or epidemics to reduce the health inequity gap across population groups. The economic/non-health related effect of pandemic/epidemic-related economic relief programmes will provide insight to how economic measures affect social determinants of health, Lastly, as nations begin planning towards future pandemics, evidence from this review will help inform policy-making on economic relief programmes to be considered for implementation based on their impact on individual and public health.

ETHICS AND DISSEMINATION

This review does not involve the collection of primary data; thus, ethical approval is not required. Our key findings will be disseminated to key health stakeholders and public health organisations at policy meetings and conferences. Findings will also be published in a peer-review journal and shared on social media platforms. The MEDLINE search strategy of the main review is attached as online supplemental file. Key variables extracted from eligible studies will be published as online supplemental file alongside the main review manuscript.

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Ovid MEDLINE(R) <1946 to September 02, 2021>
Search history sorted by search number ascending

#	Searches	Results	Type
1	Epidemics/	12059	Advanced
2	Pandemics/	64607	Advanced
3	epidemic?.mp,kw.	106246	Advanced
4	pandemic?.mp,kw.	96739	Advanced
5	((infectious or communicable) adj3 disease? adj3 outbreak*).mp,kw.	1880	Advanced
6	or/1-5 **[pandemic terms]**	195548	Advanced
7	exp Coronavirus/	91931	Advanced
8	exp Coronavirus Infections/	112700	Advanced
9	Severe Acute Respiratory Syndrome/	5605	Advanced
10	SARS-CoV-2/	79313	Advanced
11	SARS Virus/	3946	Advanced
12	Middle East Respiratory Syndrome Coronavirus/	1675	Advanced
13	COVID-19/	102073	Advanced
14	Severe Acute Respiratory Syndrome/	5605	Advanced
15	(coronavirus* or corona virus*).mp,kw.	77726	Advanced
16	(coronavirinae* or corona virinae*).mp,kw.	21	Advanced
17	(txid1898672 or txid 1898672).mp,kw.	0	Advanced
18	alphacoronavirus*.mp,kw.	236	Advanced
19	(txid693996 or txid 693996).mp,kw.	0	Advanced
20	betacoronavirus*.mp,kw.	33601	Advanced
21	(txid694002 or txid 694002).mp,kw.	0	Advanced
22	covid*.mp,kw.	105083	Advanced
23	ncovid*.mp,kw.	18	Advanced
24	HCoV*.mp,kw.	866	Advanced
25	NCoV????.mp,kw.	1444	Advanced
26	(CoV2* or CoV-2*).mp,kw.	85424	Advanced
27	(CoV19 or CoV-19).mp,kw.	86	Advanced
28	(CoV2019 or CoV-2019).mp,kw.	17	Advanced
29	(2019nCoV or 2019-nCoV).mp,kw.	1207	Advanced
30	(SARS-CoV* or SARSCoV*).mp,kw.	87752	Advanced
31	(2019nCoV* or 2019-nCoV*).mp,kw.	1219	Advanced

32	(SARS or SARSr).mp,kw.	93962	Advanced
33	(severe acute respiratory adj2 syndrome*).mp,kw.	20165	Advanced
34	(txid694009 or txid 694009).mp,kw.	0	Advanced
35	(middle eastern respiratory adj2 syndrome*).mp,kw.	61	Advanced
36	MERS.mp,kw.	5204	Advanced
37	(MERSCoV* or MERS-Cov*).mp,kw.	2311	Advanced
38	(txid1335626 or txid 1335626).mp,kw.	0	Advanced
39	or/7-38 **[coronavirus (covid-19, MERS, SARS) terms**	130012	Advanced
40	Influenza A virus/	21585	Advanced
41	Influenza A Virus, H1N1 Subtype/	16283	Advanced
42	Influenza A Virus, H2N2 Subtype/	232	Advanced
43	Influenza A Virus, H3N2 Subtype/	4501	Advanced
44	Influenza Pandemic, 1918-1919/	198	Advanced
45	influenza A.mp,kw.	52137	Advanced
46	flu A.mp,kw.	404	Advanced
47	fowl plague virus*.mp,kw.	379	Advanced
48	grippe.mp,kw.	1271	Advanced
49	pestis galli myxovirus*.mp,kw.	0	Advanced
50	orthomyxovirus*.mp,kw.	333	Advanced
51	(txid11320 or txid 11320).mp,kw.	0	Advanced
52	H1N1.mp,kw.	20516	Advanced
53	(spanish adj2 (influenza?? or flu)).mp,kw.	457	Advanced
54	(("1918" or "1919") adj2 (influenza?? or flu)).mp,kw.	905	Advanced
55	(russian* adj2 (influenza?? or flu)).mp,kw.	35	Advanced
56	("1977" adj2 (influenza?? or flu)).mp,kw.	35	Advanced
57	(swine adj2 (influenza?? or flu)).mp,kw.	2886	Advanced
58	("2009" adj2 (influenza?? or flu)).mp,kw.	3456	Advanced
59	(txid114727 or txid 114727).mp,kw.	0	Advanced
60	H2N2.mp,kw.	664	Advanced
61	(asian adj2 (influenza?? or flu)).mp,kw.	597	Advanced
62	(("1957" or "1958") adj2 (influenza?? or flu)).mp,kw.	155	Advanced
63	H3N2.mp,kw.	7665	Advanced
64	(hong kong adj2 (influenza?? or flu)).mp,kw.	543	Advanced
65	(("1968" or "1969") adj2 (influenza?? or flu)).mp,kw.	107	Advanced
66	(fujian adj2 (influenza?? or flu)).mp,kw.	16	Advanced

67	(("2003" or "2004") adj2 (influenza?? or flu)).mp,kw.	382	Advanced
68	(txid119210 or txid 119210).mp,kw.	0	Advanced
69	or/40-68 **[Influenza A terms]**	57166	Advanced
70	exp HIV Infections/	295610	Advanced
71	exp HIV/	102665	Advanced
72	HIV Long-Term Survivors/	782	Advanced
73	HIV Testing/	285	Advanced
74	AIDS Serodiagnosis/	6737	Advanced
75	hiv.mp,kw.	343908	Advanced
76	hiv??.mp,kw.	346169	Advanced
77	htlv*.mp,kw.	13362	Advanced
78	human t-cell leukemia virus*.mp,kw.	3334	Advanced
79	(acquired adj3 immun* adj3 (syndrome* or virus*)).mp,kw.	92284	Advanced
80	(human* adj3 immun* adj3 deficien* adj3 virus*).mp,kw.	688	Advanced
81	(human* adj3 immun* adj3 virus*).mp,kw.	96261	Advanced
82	(syndrome* adj3 lymphadenopath*).mp.	460	Advanced
83	(lymphadenopath* adj3 (related or associated) adj3 (virus* or retrovirus* or lentivirus*)).mp,kw.	321	Advanced
84	slim disease.mp,kw.	25	Advanced
85	lav-htlv-iii.mp,kw.	210	Advanced
86	(sbl-6669 or sbl6669).mp,kw.	25	Advanced
87	(lav-2 or lav2).mp,kw.	30	Advanced
88	sbl6669.mp,kw.	9	Advanced
89	(acquired adj3 immun* adj3 deficien* adj3 syndrome*).mp,kw.	5755	Advanced
90	(aids adj10 (disease* or syndrome*)).mp,kw.	31323	Advanced
91	(aids adj3 associated adj3 (virus* or retrovirus* or lentivirus*)).mp,kw.	170	Advanced
92	(aids adj2 related).mp.	31174	Advanced
93	or/70-92 **[HIV/AIDS terms]**	413152	Advanced
94	Hemorrhagic Fever, Ebola/	5996	Advanced
95	Ebolavirus/	3579	Advanced
96	ebola*.mp,kw.	8884	Advanced
97	EVD.mp,kw.	1847	Advanced
98	EHF.mp,kw.	591	Advanced
99	txid?128951.mp,kw.	0	Advanced

100	txid?186536.mp,kw.	0	Advanced
101	or/94-100 **[ebola terms]**	10290	Advanced
102	Zika Virus Infection/	5437	Advanced
103	Zika Virus/	4849	Advanced
104	zika.mp,kw.	7732	Advanced
105	zikv.mp,kw.	2920	Advanced
106	txid?64320.mp,kw.	0	Advanced
107	or/102-106 **[zika virus terms]**	7748	Advanced
108	West Nile Fever/	4294	Advanced
109	West Nile virus/	4802	Advanced
110	(west nile adj2 virus*).mp,kw.	7041	Advanced
111	(west nile adj2 flavivirus*).mp,kw.	199	Advanced
112	(west nile adj2 infection?).mp,kw.	982	Advanced
113	(west nile adj2 fever?).mp,kw.	4552	Advanced
114	(west nile adj2 encephalitis).mp,kw.	544	Advanced
115	(west nile adj2 meningitis).mp,kw.	17	Advanced
116	(west nile adj2 meningoencephalitis).mp,kw.	39	Advanced
117	(west nile adj2 myelitis).mp,kw.	3	Advanced
118	(egypt 101 adj2 virus*).mp,kw.	7	Advanced
119	(egypt 101 adj2 flavivirus*).mp,kw.	0	Advanced
120	(kunjin adj2 virus*).mp,kw.	245	Advanced
121	(kunjin adj2 flavivirus*).mp,kw.	59	Advanced
122	WNV.mp,kw.	3673	Advanced
123	txid11077.mp,kw.	0	Advanced
124	txid11082.mp,kw.	0	Advanced
125	or/108-124 **[west nile terms]**	7831	Advanced
126	6 or 39 or 69 or 93 or 101 or 107 or 125 **[pandemics or coronaviruses or influenza a or hiv/aids or ebola or zika or west nile terms]**	698339	Advanced
127	Financing, Government/	21166	Advanced
128	Public Assistance/	2969	Advanced
129	Food Assistance/	1397	Advanced
130	Medical Assistance/	2525	Advanced
131	Workers' Compensation/	7645	Advanced
132	exp Charities/	3950	Advanced

133	Child Welfare/	22226	Advanced
134	Aid to Families with Dependent Children/	752	Advanced
135	Foundations/ec [Economics]	686	Advanced
136	Relief Work/	4103	Advanced
137	Sick Leave/	6248	Advanced
138	Family Leave/	357	Advanced
139	Parental Leave/	756	Advanced
140	Insurance, Disability/	1526	Advanced
141	Financial Support/	3856	Advanced
142	Social Security/	7663	Advanced
143	(economic adj2 (payment? or plan or plans or program* or intervention?)).mp,kw.	943	Advanced
144	(economic adj3 (relief or support*)).mp,kw.	1369	Advanced
145	(economic adj5 (assistance or benefit?)).mp,kw.	6715	Advanced
146	(financial adj5 (relief or assistance or support* or payment? or benefit? or plan or plans)).mp,kw.	13462	Advanced
147	(financial adj3 (program* or aid)).mp,kw.	1258	Advanced
148	(income adj2 (relief or assistance or support* or payment? or benefit? or replacement?)).mp,kw.	1039	Advanced
149	(income adj3 (plan or plans or program*)).mp,kw.	1532	Advanced
150	(monetary adj5 (relief or assistance or support* or payment? or benefit? or plan or plans or replacement?)).mp,kw.	961	Advanced
151	(monetary adj5 program*).mp,kw.	133	Advanced
152	(government adj2 (relief or assistance or support* or payment? or benefit?)).mp,kw.	2041	Advanced
153	(government adj5 (subsid* or aid)).mp,kw.	1073	Advanced
154	(unemployment adj3 (relief or assistance or support* or payment? or benefit? or plan or plans or program* or replacement? or insurance)).mp,kw.	544	Advanced
155	(employment adj3 (relief or assistance or support* or payment? or benefit? or plan or plans or program* or replacement? or insurance)).mp,kw.	3864	Advanced
156	(social adj2 (relief or assistance or payment?)).mp,kw.	1166	Advanced
157	(economic adj2 impact* adj2 pay*).mp.	11	Advanced
158	(federal adj2 aid).mp,kw.	86	Advanced
159	(federal adj2 allocation?).mp,kw.	35	Advanced
160	(public adj2 subsid*).mp,kw.	278	Advanced

161	(public adj2 assistance).mp,kw.	3768	Advanced
162	(food adj5 (security or insecurity) adj5 (support* or benefit? or plan or plans or program or aid)).mp,kw.	437	Advanced
163	(food adj2 assistance).mp,kw.	1729	Advanced
164	(food adj2 relief).mp,kw.	68	Advanced
165	(food adj2 aid).mp,kw.	345	Advanced
166	(food adj2 (fund? or funding)).mp,kw.	58	Advanced
167	(emergency adj3 medical adj3 assistance).mp,kw.	145	Advanced
168	child welfare.mp,kw.	23373	Advanced
169	(charity or charities).mp,kw.	6514	Advanced
170	almshous*.mp,kw.	90	Advanced
171	relief work?.mp,kw.	4169	Advanced
172	(humanitarian adj2 assistance).mp,kw.	353	Advanced
173	(sick adj4 leave?).mp,kw.	8864	Advanced
174	medical leave?.mp,kw.	261	Advanced
175	disability leave?.mp,kw.	56	Advanced
176	(sick adj2 day?).mp,kw.	1176	Advanced
177	illness day?.mp,kw.	132	Advanced
178	sick absence?.mp,kw.	45	Advanced
179	illness absence?.mp,kw.	56	Advanced
180	family leave?.mp,kw.	440	Advanced
181	parental leave?.mp,kw.	892	Advanced
182	((childcare or child-care) adj2 benefit?).mp,kw.	33	Advanced
183	((childcare or child-care) adj2 support*).mp,kw.	180	Advanced
184	((childcare or child-care) adj2 assistance).mp,kw.	55	Advanced
185	((childcare or child-care) adj2 welfare).mp,kw.	11	Advanced
186	(disabilit* adj2 insurance).mp,kw.	2132	Advanced
187	(worker?? adj2 compensation?).mp,kw.	9024	Advanced
188	((workm#n* or workwom#n*) adj2 compensation?).mp,kw.	1495	Advanced
189	(covid* adj3 response adj3 (grant* or fund*)).mp,kw.	5	Advanced
190	(debt? adj2 relie*).mp,kw.	48	Advanced
191	(defer* adj2 payment?).mp,kw.	7	Advanced
192	emergency fund*3.mp,kw.	144	Advanced
193	emergency response benefit?.mp,kw.	0	Advanced
194	foreign aid.mp,kw.	714	Advanced

195	humanitarian aid.mp,kw.	392	Advanced
196	((relief or recovery) adj2 fund*3).mp,kw.	123	Advanced
197	social protection program*.mp,kw.	64	Advanced
198	universal basic income?.mp.	14	Advanced
199	(Coronavirus Aid Relief adj2 Economic Security Act).mp,kw.	4	Advanced
200	CARES act.mp,kw.	15	Advanced
201	(stimulus adj2 (cheque? or check? or payment? or money)).mp,kw.	36	Advanced
202	or/127-198 **[economic relief terms]**	123561	Advanced
203	126 and 202 **[pandemic/infectious disease terms AND economic relief terms]**	6311	Advanced
204	animals/ not (animals/ and humans/)	4847742	Advanced
205	203 not 204 **[remove animal studies from the search]**	6283	Advanced
206	limit 205 to (clinical conference or comment or consensus development conference or consensus development conference, nih or editorial or letter)	324	Advanced
207	205 not 206 **[conferences, editorials, letters, comments removed]**	5959	Advanced
208	remove duplicates from 207	5949	Advanced
209	limit 208 to yr="2001 -Current" **[limited to results from the 21st century]**	4236	Advanced